

What is claimed is:

1. A method of manufacturing a semiconductor integrated circuit device comprising the steps of:
providing a processing solution consisting of an aqueous solution which includes hydracid fluoride salt; and

cleaning a surface of a silicon wafer, in a sheet-by-sheet manner, with said processing solution.

2. A method of manufacturing a semiconductor integrated circuit device according to claim 1, wherein said processing solution further includes hydrogen peroxide.

3. A method of manufacturing a semiconductor integrated circuit device according to claim 1, wherein the hydracid fluoride salt included in said processing solution is ammonium fluoride.

4. A method of manufacturing a semiconductor integrated circuit device according to claim 1, wherein the hydracid fluoride salt included in said processing solution is tetraalkyl ammonium fluoride.

5. A method of manufacturing a semiconductor integrated circuit device according to claim 1, wherein said processing solution includes HF and HF_2^- as etching seeds of silicon oxide.

6. A method of manufacturing a semiconductor integrated circuit device according to claim 1, wherein a temperature of said processing solution is one of an ordinary temperature and a temperature nearly equal thereto.

7. A method of manufacturing a semiconductor integrated circuit device according to claim 1, wherein said processing solution further includes a surfactant.

8. A method of manufacturing a semiconductor integrated circuit device according to claim 1, further comprising a step of cleaning the surface of said silicon wafer during ultrasonic vibration of said processing solution.

9. A method of manufacturing a semiconductor integrated circuit device comprising the steps of:

(a) applying a processing solution consisting of an aqueous solution which includes hydrochloric acid fluoride salt thereby to clean a surface of a silicon wafer, in a sheet-by-sheet manner;

(b) subjecting said silicon wafer to a heat treatment thereby to form a gate oxide film on the surface of the silicon wafer; and

(c) patterning a conductive film deposited above said gate oxide film thereby to form a gate electrode.

15. A method of manufacturing a semiconductor integrated circuit device according to claim 9, wherein a temperature of said processing solution is one of an ordinary temperature and a temperature nearly equal thereto.

16. A method of manufacturing a semiconductor integrated circuit device according to claim 9, further comprising a step of cleaning said silicon wafer during ultrasonic vibration of said processing solution.